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Exchange Group

Duration of Tour

1. Tooling for Production of Large Airframes. Short term, 2 - 3 weeks

This exchange would include visits to production sites involved in manufacture of large aircraft. Much of the tooling techniques would apply equally to the production of long range missiles. For example, in the US the jigs for the Thor IRBM at Douglas Aircraft are as big and massive as those for the DC-8 jet airliner.

2. Fabrication of High Temperature Materials for Aircraft Construction. Short term, 2 - 3 weeks

Exchange would include observing welding and forming of titanium and other high temperature materials. High temperature materials are used in supersonic aircraft and in space weapons. Technique for fabrication would apply to broad categories of supersonic vehicles.

3. Special Purpose Machine Tools Used in the Manufacture of Aircraft. Short term, 2 - 3 weeks

Exchange would include observing operation of large spar mills, skin mills and stretch presses. In the US, such equipment is used in all aircraft plants concerned with producing large aircraft. Although there is not much evidence which suggests that the Soviets are using such equipment, it is believed that they must use modern techniques in order to produce high performance aircraft. If they are not, their aircraft may be considerably heavier than has been estimated, which would affect performance, especially the range.

All of these suggested exchanges probably would result in some technological gain to the USSR, but the intelligence gain to the US would more than offset this. It is believed that the intelligence collected would enable the US to better assess Soviet capabilities to produce long-range weapon carrying vehicles.

4. Theoretical Shipbuilding. Short term, 2 - 3 weeks
5. Practical Shipbuilding. Long term, 3 - 6 months

Both of these shipbuilding exchanges were initiated in 1956 with no results to date. The Shipbuilding Subcommittee of EIC considered these exchanges in 1956 and stated that there would be a net US gain in both fields on a short term basis. In theoretical shipbuilding, an exchange of papers and delegates to technical society meetings was suggested. In September 1957, the Subcommittee again considered

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the matter in view of the Soviet proposal for exchanges on a long-term basis. Committee stated that in practical shipbuilding, there would still be a net US gain resulting from a long-term exchange (3-6 months), but that in theoretical shipbuilding, a long-term exchange was not recommended. In late 1958, a letter was received by the President, American Society of Naval Engineers from the President of the Soviet Society proposing an exchange of visitors to society meetings. Reply was sent suggesting an exchange with Society of Naval Architects and Marine Engineers instead of ASNE. Nothing further from Soviets.

6. Antifriction Bearings.

Short term, 2 - 3 weeks

The USSR bearings industry has grown rapidly in recent years and has been placing considerable emphasis on mechanization and automation. Only one of the ten bearings manufacturing plants has been shown regularly to Western visitors. One other has been shown to Joseph Alsop and to an American chiropractor. The other eight plants have in effect been closed to Westerners. Exchanges would make it possible to determine to what extent advance technology employed at the Number One Bearings Plant in Moscow is used throughout the industry. It would also be desirable to find out how much use the Soviets are making of the new materials for bearings about which they have written in periodicals. It might also be possible to gain some information on how well the industry is doing in the field of miniature bearings which are receiving increasingly wide application in instrumentation. All ten Soviet bearings producers are located in cities of guided missile interest.

7. Railroad Car Manufacturing.

Short term, 2 - 3 weeks

In the production of railway cars, Soviet technology differs little from that employed in the US. Production runs, however, are much larger in the US. The industry is of intelligence interest for two reasons: No Americans have visited any Soviet railway car plants and it would therefore be desirable to verify press and periodical information on the industry; and second, plant visits might provide some additional clues on railway cars used in transporting guided missiles. It may at least be possible to establish what plants are not engaged in the production of such cars. The industry is also of interest in that the largest railway car plant is also the largest producer of medium tanks in the USSR.

8. Production of Microwave Equipment
(for 1960).

Short term, 2 - 3 weeks

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<u>Exchange Group</u>	<u>Duration of Tour</u>
9. Production of Precision Electrical Instruments (1960).	Short term, 2 - 3 weeks
10. Electronics Production Techniques (1961).	Short term, 2 - 3 weeks
11. Production of Computers (1961).	Short term, 2 - 3 weeks

All the fields enumerated in 8-11 above enjoy high priority under the Soviet Seven Year Plan. Also, all these fields play an important role in Soviet military and industrial capabilities. Nos. 10 and 11 would be repeats of exchanges which have taken place this year, but in anticipation of rapid development in these industries, it is deemed desirable to schedule redos for 1961.

12. Government Statistics. Short term, 4 weeks

A governmental statistics exchange would investigate the collection, processing and analysis of data used by the US and the USSR for the construction of various aggregate measures of production, price changes, inventory, income, etc. Moscow and Washington would be the focal point for the exchange delegations although visits to regional offices would also be desired.

13. Guided Missile Experts' Exchange. Short term, 4 weeks

14. Aerobee Rocket Exchange. Short term

Involves the exchange of a highly publicized US vehicle with one of several little known Soviet vehicles thus providing substantial net gain to US. Might provide I/GM information on production and/or assembly installations, manufacturing techniques and related data.

15. Air Pilots' Exchange. Long term, 4 - 5 months

Exchanges in which I/GM has a direct interest but which deal with subjects for which another component of ORR has primary responsibility include high energy fuels exchange, chemicals exchange, telemetering equipment exchange and nonferrous metallurgy exchange. Also, I/GM is interested in the following exchanges only from the point of view that their itineraries might be arranged to include geographic areas in which I/GM has targets: archeology, ethnology, salmon fisheries, permafrost, tungsten, titanium, nickel, copper, gold, zinc, aluminum, platinum, beryllium, arsenic, potash, Arctic research.